

U.S. Serial No. 10/673,608

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IN THE CLAIMS

Please amend Claims 16 and 20 as follows. Please add new Claim 24 as set forth below.

1-15. (Canceled).

16. (Currently amended) An apparatus for making a correspondence between digital information in electric signal form and information in magnetic signal form recorded in helical tracks on a magnetic recording tape, comprising:

- a magnetic transducing head;
- a head driving mechanism which causes said magnetic transducing head to scan on said helical tracks from a preamble portion disposed at a lower side of said magnetic recording tape preceding a digital signal information portion that includes a plurality of data blocks, each data block including a first header signal containing a first synchronizing signal and a first address signal; and

~~a control circuit which determines a start timing of said digital information in response to a plurality of spaced apart header signals in said preamble portion transduced between said head and said tape,~~

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~~wherein each of said header signals includes a synchronizing signal, and an address signal.~~

wherein a plurality of second header signals are recorded in said preamble portion, and each of said second header signals includes a second synchronizing signal, and a second address signal in continuity with said first address signal.

17. (Previously presented) The apparatus of claim 16, wherein each of said header signals further includes a parity signal for correcting an error.

18. (Previously presented) The apparatus of claim 17, wherein each of said header signals further includes an identification signal for controlling said digital information.

19. (Previously presented) The apparatus of claim 16, wherein said control circuit further determines and protects a synchronous state based on said header signals already transduced.

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20. (Currently amended) An apparatus for recording digital information into helical tracks on a magnetic tape, comprising:

a rotary magnetic head;

a head driving mechanism which causes said rotary magnetic head to scan on said helical tracks from a preamble portion disposed at a lower side of said magnetic recording tape preceding a digital signal information portion that includes a plurality of data blocks, each data block including a first header signal containing a first synchronizing signal and a first address signal; and

a control circuit which controls a recording sequence to record second header signals spaced apart in said preamble portion before recording said digital information on each of said helical tracks,

wherein each of said second header signals includes a second synchronizing signal, corresponding to said first synchronizing signal, and a second address signal in continuity with said first address signal. ~~and an address signal, and~~

~~wherein a timing for start of reproducing of said digital information is determined in response to reading said synchronizing signals while reproducing.~~

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21. (Previously presented) The apparatus of claim 20, wherein each of said header signals further includes a parity signal for correcting an error.

22. (Previously presented) The apparatus of claim 21, wherein each of said header signals further includes an identification signal for controlling said digital information.

23. (Previously presented) The apparatus of claim 21, wherein said control circuit records said header signals for protecting a synchronous state in reproducing mode.

24. (New) A digital signal recording apparatus for recording while forming tracks in a helical form by rotating head on a magnetic tape; said apparatus comprising:

a generation processing unit for dividing a digital signal into a plurality of data blocks, and for generating processing digital signal data in which a first synchronizing signal for indicating at least a start position of the data block and first header information including a first address signal indicating order of the

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data blocks are arranged so that a predetermined time interval is disposed between successive synchronizing signals;

a generation unit for generating a preamble signal preceding to said digital signal data on the time axis, and disposing a plurality of second synchronizing signals corresponding to said first synchronizing signal, and a second header information portion including a second address signal indicating order of said second synchronizing signals having continuity with said first address signal; and

a recording unit for recording said first synchronizing signal within said digital signal data and said first address signal at a lower side of a track on the tape, further recording said preamble signal in continuity with said digital signal data, and recording said second synchronizing signal with said second address signal at a further lower side of the recording position on said track of said first synchronizing signal and first address signal.

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